EPA/HDOH February 24, 2015 comments on Navy Document
"TANK UPGRADE / RELEASE DETECTION STUDY PROPOSED SCOPE OF WORK"

EPA and HDOH are providing preliminary comments to the *Scope of Report*, dated February 5, 2015, and originally received on February 8, 2015. The Hawaii Department of Health and the U.S. Environmental Protection Agency ("Regulatory Agencies") understand the purpose of this document is to initiate the U.S. Navy's contracting process for evaluating tank and release detection upgrade alternatives for the large field constructed bulk fuel tanks ("tanks") at the Red Hill Bulk Fuel Storage Facility ("Facility").

As you are aware, the Regulatory Agencies are currently negotiating an Administrative Order on Consent and associated Statement of Work ("AOC/SOW") with the Navy and DLA to establish a process for evaluating various technologies and procedures to establish the best available practicable technology ("BAPT") for release prevention and detection improvements that can be applied to the tanks at the Facility. The Regulatory Agencies understand that senior Department of Defense leadership support the evaluation of technological improvements immediately and may support the funding of major improvements and/or pilot program testing as early as Federal Fiscal Year 2017.

Although we acknowledge the Navy's desire to initiate reports and studies as soon as possible, the Regulatory Agencies cannot guarantee that work performed prior to the effective date of the AOC/SOW will satisfy the requirements of the agreement. Therefore, the comments in this message should be considered preliminary. Comprehensive input from the Regulatory Agencies will be provided as part of the negotiated AOC/SOW process and the review of specified deliverables. The comments in this email provide the Navy with an opportunity to develop a placeholder Scope of Report that may address the full range of alternatives to study and evaluate. The Regulatory Agencies emphasize that the Navy must conduct an extensive review of equipment upgrades and procedural improvements in order to establish an effective plan for the facility.

1) The Navy should use qualified contactors, staff, and individuals with the appropriate expertise and credentials to conduct a robust evaluation of technologies. The Regulatory Agencies recommend that the Navy look to expertise from industry, trade associations, and academia to assist with the identification and evaluation of viable upgrade alternatives. The Navy should not limit its evaluation to domestic expertise, nor should the Navy limit its search to the liquid petroleum storage industry. For example, a 66 million gallon underground Liquefied Natural Gas tank was recently constructed in Yokohama, Japan. Technologies used in the construction of this tank may be applicable to the Facility.

2) The Navy's selection of technologies to study should not be limited to current commercially available technologies. Technologies that may become commercially

available and technologies used in other industries that may be adapted for the Facility should be evaluated.

3) Any work performed to describe the current conditions of the facility should provide sufficient information to aid in the development and evaluation of upgrade alternatives. The Regulatory Agencies suggest inclusion of the following:
    a. The basis for the structural design for the tanks at the Facility;
    b. The materials used in the construction of the Facility, including the characteristics of the steel and concrete along with the design of the welds used in the construction of the tanks;
    c. An inventory and description of the currently used procedural manuals for the operation of the facility;
    d. Emergency procedures used if fuel loss is indicated by tank monitoring or tank testing;
    e. An explanation of current tank tightness testing and release detection methods, including an analysis of the methods' sensitivity and potential for false indications;
    f. A summary of current tank inspection, repair, and maintenance procedures, including quality control processes
    g. Identification of "wear" mechanisms acting upon the tanks and their associated equipment that result in the degradation of tank integrity and equipment operation/reliability/accuracy.
    h. A description of the American Petroleum Institute maintenance standards and procedures, including the evolution of modifications to these procedures and the basis for such modifications.
    i. A summary of improvements, modifications, or revisions to prevent issues related to both the January 2014 fuel release at Tank 5 and historic issues encountered during the inspection and repair of other tanks that would be relevant to the development of BAPT.

4) The Navy should evaluate a comprehensive range of tank upgrade alternatives, from status quo to full removal and replacement of the interior of the tanks. Upgrade alternatives should also include improvement of procedures used to upgrade and/or repair the tanks including non-destructive testing and welding technologies. Any information used from technology vendors should include documentation describing vendor claims, along with information and the process used to evaluate the vendor claims.

5) The factors used to evaluate potential BAPT should be expanded to include an evaluation of the testing required and/or recommended prior to the Navy's implementation of technology at full scale. The rationale for this testing should be explained in detail.

6) The Decision Matrix referenced should be expanded to include the expected reliability of proposed technologies and the ability to make repairs to tanks once a technology has been installed.

7) The report on the current fuel release monitoring systems should be expanded to include a description and explanation of current tank tightness testing protocols, including a detailed description of the methods used and the basis for employing those methods over other available methods. The description should also include an evaluation of the method accuracy including the potential for false positives and false negatives.

8) The initial evaluation of the fuel release monitoring systems should consider the recommissioning procedures, and how release detection is conducted during dynamic filling and fuel delivery from the tanks. The sensitivity of the current methods should be evaluated and explained in order to identify opportunities for improvements.

9) For evaluation of improvements to the Release Detection Systems and tank tightness testing methods, the Navy should perform an extensive review of technologies used globally. The Navy should look to industry associations, industry experts, and fluid measurement experts from other industries to help develop the menu of alternatives for analysis. Emerging technologies should be considered. Lack of third party certification should not rule out a technology for analysis. Theoretical accuracy and required/recommended testing prior to full scale implementation should be included in the analysis.

10) Project Management and Reporting should be expanded to include regular progress updates (e.g. monthly teleconferences involving the Regulatory Agencies), a workplan describing the investigation strategy, an initial inventory of technologies and vendors to be considered as an interim deliverable, and a draft report to allow for Regulatory Agency review and comments. Additionally, the Regulatory Agencies encourage the Navy to develop a strategy for obtaining external stakeholder input into this initial study process.